
Fire - Law Enforcement - EMS

Ebola Information and Guidance

The following is compiled from information from the North Dakota Department of Health and the U.S. Centers for Disease Control and Prevention

Ebola Virus Disease

Ebola virus disease (EVD) is a potentially deadly infectious disease that has been reported in portions of sub-Saharan Africa since 1976. Currently there is a large outbreak occurring in the West African countries of Liberia, Sierra Leone and Guinea. A small number of cases have been reported in other countries, including Spain and the United States.

Symptoms of Ebola

Typically, the first symptoms of Ebola include:

- a sudden fever
- sore throat
- muscle pain
- fatigue
- weakness

This typically is followed by:

- vomiting
- diarrhea and rash
- kidney and liver problems
- in some cases, internal and external bleeding

A person can start to show symptoms of the virus anywhere from two to 21 days after being infected. People who are infected cannot infect others until they begin to show symptoms of the illness.

Transmission of Ebola

- People are infectious only when they have symptoms such as fever, vomiting, diarrhea, etc.
- Infection can happen when someone has direct contact with an infected person's blood; vomit; stool; urine; saliva; semen; breast milk, or other bodily fluids or secretions.
- People can also become infected during direct contact with soiled clothing and bed linen, used needles or other items that have become contaminated with an Ebola patient's infectious fluids.
- Direct contact means that body fluids (blood, saliva, mucus, vomit, urine, or feces) from an infected person (alive or deceased) have touched someone's eyes, nose, or mouth or an open cut, wound, or abrasion.

Protective recommendations and interim guidance

The CDC provided interim guidance for first responders in situations where they may be dealing with

a person suspected of having Ebola. The main aspects of the guidance are as follows:

Situational Awareness

- 1. Get information from dispatch regarding possible Ebola status**
- 2. Make sure you know where you will be transporting the patient**
 - Ask whether the NDDoH is aware of the situation
 - Find out where the patient is to be transported
 - Make sure that facility knows a possible Ebola patient will be transported

Patient assessment

- 1. Address scene safety:**
 - If call takers advise that the patient is suspected of having Ebola, EMS personnel should put on the PPE appropriate for suspected cases of Ebola (described below) before entering the scene.
 - Keep the patient separated from other people as much as possible.
 - Use caution when approaching a patient with Ebola. In some cases, the illness in its advanced stages can cause delirium, with erratic behavior, e.g., flailing or staggering, that can place EMS personnel at risk of infection.
- 2. During patient assessment and management, EMS personnel should consider the symptoms and risk factors of Ebola:**
 - All patients should be assessed for symptoms of Ebola (fever of greater than 38.0 degrees Celsius or 100.4 degrees Fahrenheit, or additional symptoms such as severe headache, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage). If the patient has symptoms of Ebola, then ask the patient about risk factors within the past three weeks before the onset of symptoms, including:
 - Contact with blood or body fluids of a patient (alive or deceased) known to have or suspected to have Ebola;
 - Residence in—or travel to—a country where an Ebola outbreak is occurring. A list of impacted countries is available at: <http://www.cdc.gov/vhf/ebola/outbreaks/guinea/index.html>(<http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/index.html>)
 - Direct handling of bats or nonhuman primates from disease-endemic areas.
 - Based on the presence of symptoms and risk factors, put on or continue to wear appropriate personal protective equipment (PPE) and follow the scene safety guidelines for suspected case of Ebola. Please note that CDC is expected to provide an updated set of recommendations soon regarding PPE in the context of Ebola response. More information will be available on the CDC website at www.cdc.gov.
 - If there are no risk factors, proceed with normal EMS care.

EMS Transfer of Patient Care to a Health Care Facility

EMS personnel should notify the receiving health care facility when transporting a suspected Ebola patient, so that appropriate infection control precautions may be prepared prior to patient arrival. Any U.S. hospital that is following [CDC's infection control recommendations](http://www.cdc.gov/vhf/ebola/hcp/infection-prevention-and-control-recommendations.html) (<http://www.cdc.gov/vhf/ebola/hcp/infection-prevention-and-control-recommendations.html>) and can isolate a patient in a private room is capable of safely managing a patient with Ebola. However, Sanford Health in Bismarck and Fargo has been designated as an Ebola treatment center, and transport will likely eventually be made to one of their facilities.

Inter-facility Transport

EMS personnel involved in the air or ground inter-facility transfer of patients with suspected or confirmed Ebola should wear recommended PPE (interim guidance below).

Infection Control

EMS personnel can reduce their personal risk while managing a patient with blood-borne diseases such as Ebola by following recommended isolation and infection control procedures, including Standard, Contact, and Droplet Precautions. Particular attention should be paid to protecting mucous membranes of the eyes, nose, and mouth from splashes of infectious material, or self-inoculation from soiled gloves.

Early recognition and identification of patients with potential Ebola is critical. While CDC is expected to update recommendations pertaining to PPE for Ebola cases, in the absence of those updated recommendations an EMS agency managing a suspected Ebola patient should follow the interim CDC recommendations below:

- Limit activities, especially during transport, that can increase the risk of exposure to infectious material (e.g., airway management, cardiopulmonary resuscitation, use of needles).
- Limit the use of needles and other sharps as much as possible. All needles and sharps should be handled with extreme care and disposed in puncture-proof, sealed containers.
- Phlebotomy, procedures, and laboratory testing should be limited to the minimum necessary for essential diagnostic evaluation and medical care.

Use of Personal protective equipment (PPE)

Use of Standard, Contact, and Droplet Precautions is sufficient for most situations when treating a patient with a suspected case of Ebola as defined above. EMS personnel should wear:

- Gloves
- Gown (fluid-resistant or impermeable)
- Eye protection (goggles or face shield that fully covers the front and sides of the face)
- Facemask
- Additional PPE might be required in certain situations (e.g., large amounts of blood and body fluids present in the environment), including but not limited to double gloving, disposable shoe covers, and leg coverings. CDC is expected to post updated recommendations soon.

Pre-hospital resuscitation procedures such as endotracheal intubation, open suctioning of airways, and cardiopulmonary resuscitation can result in a release of large amounts of body fluids, such as saliva and vomit. Performing these procedures in a less controlled environment (e.g., moving vehicle) increases risk of exposure for EMS personnel. If conducted, perform these procedures under safer circumstances (e.g., stopped vehicle, hospital destination).

During pre-hospital resuscitation procedures (intubation, open suctioning of airways, cardiopulmonary resuscitation):

- In addition to recommended PPE, respiratory protection that is at least as protective as a **NIOSH-certified fit-tested N95 filtering face-piece respirator or higher should be worn (instead of a facemask)**.
- Additional PPE must be considered for these situations to cover all exposed skin due to the potential increased risk for contact with blood and body fluids including, but not limited to, double gloving, disposable shoe covers, and leg coverings.

If blood, body fluids, secretions, or excretions from a patient with suspected Ebola come into direct

contact with the EMS provider's skin or mucous membranes, then the EMS provider should immediately stop working. They should wash the affected skin surfaces with soap and water and report exposure to an occupational health provider or supervisor for follow-up.

Recommended PPE should be used by EMS personnel as follows:

- PPE should be worn upon entry into the scene and continued to be worn until personnel are no longer in contact with the patient.
- PPE should be carefully removed without contaminating one's eyes, mucous membranes, or clothing with potentially infectious materials.
- PPE should be placed into a medical waste container at the hospital or double bagged and held in a secure location.
- Re-useable PPE should be cleaned and disinfected according to the manufacturer's reprocessing instructions and EMS agency policies.
- Instructions for putting on and removing PPE have been published online at: <http://www.cdc.gov/HAI/prevent/ppe.html> and <http://www.cdc.gov/vhf/ebola/pdf/ppe-poster.pdf> [PDF - 2 pages] (<http://www.cdc.gov/vhf/ebola/pdf/ppe-poster.pdf>).
- Hand hygiene should be performed immediately after removal of PPE.

For up to date information on the EBOLA outbreak and the CDC's guidelines for healthcare and emergency responders please visit the North Dakota Department of Health's website at:

<http://ndhealth.gov/disease/ebola/default.aspx>